

CONRAC
CORPORATION

A

ANOTHER **Datamation** READER INQUIRY
T NELSON CUN
BOX 3
SCHOOLEYS MTN
NJ 07870

PROD

Conrac Division 600 North Rimsdale Avenue, Covina, California 91722 / (213) 966-3511

Telex: 670437

C	O	N	R	A	C
CORPORATION					

April 16, 1970

Mr. T. Nelson, Consultant
Box 3
Schooleys Mountain
New Jersey 07870

Dear Mr. Nelson:

Enclosed is a copy of our industrial catalog and price list which include our full line of CRT displays. Conrac's displays are used around the world in all types of computer based data display, closed circuit television, medical, broadcast, and other industrial applications where reliable high performance CRT displays are required.

I am also enclosing a specification sheet on our CDF X-Y display. This unit sells, in single quantities, for \$995.00.

Please let me know if you have further questions regarding our product line.

Very truly yours,



K. C. Walker
Sales Administrator
Data Display Equipment

KCW:vlh

Enclosures



CONRAC
Industrial Television Equipment

OFF-AIR RECEIVERS



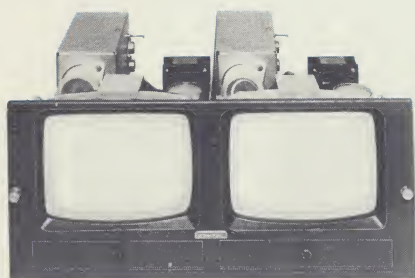
AUDIO-VIDEO RECEIVER
Model AV12E/AV82E



MULTIPLE DISPLAY CONTROL RECEIVER
Model ERL82A

Designed for off-air monitoring, video recording, or re-broadcast applications, Conrac's AV12E and AV82E supply composite video and separate audio from modulated RF signals. Available for single channel VHF, multi-channel VHF, or VHF/UHF operation. Furnished in rack hanger for mounting in standard 19" rack, 7" high, 12-1/16" deep.

The multiple display control receivers, model ERL, allow single location control of both picture and sound for any large grouping of local monitors. 10mHz video signals are distributed; locally originated audio and video may be switched in to replace off-air signals. Equipped to receive both VHF and UHF, the ERL receivers are available in a metal cabinet for desk top mounting, or for mounting in 7 vertical inches of 19" rack space, 10-1/16" deep.



9-INCH DISPLAY
RND9 SERIES

A high performance, solid state monochrome display, the RND9 features high reliability, low power drain, small size and minimum heat, with 10mHz video response, total power regulation, designed for continuous duty with broadcast, industrial or computer generated signals. RND9 series includes chassis, portable cabinet, rack mount and dual rack mount (19" rack, 8-3/4" high, 15-1/16" deep) models.



14-INCH DISPLAY
Models RKC14, RLC14

The solid state monochrome Conrac RKC and RLC 14-inch displays have high reliability, low power drain, 10mHz video response, total power regulation, a 70-degree tube to assure accurate picture geometry. The RKC14 is a portable cabinet model; the RLC14 is a rack mount unit using 10-1/2" of vertical rack space, 17-3/8" deep (can mount in any console designed to accommodate a CLD14 since all dimensions are identical).



17- & 23-INCH DISPLAYS
Models RVC17, RVC23

Solid state monochrome RVC displays offer high reliability, low power drain, 10mHz video response, total power regulation, differential input to minimize hum on long cables, horizontal switch to select normal or fast AFC. RVC17 uses a standard clear laminated safety shield; RVC23 uses an etched laminated safety shield to minimize specular reflections, and a locking trapdoor to prevent tampering with controls. Chassis, cabinet and rack mount models are available.

Shown: Model RVC23/Y with speaker and ceiling mount.

GENERAL PURPOSE DISPLAYS SOLID STATE

A complete specification sheet is available for each product.

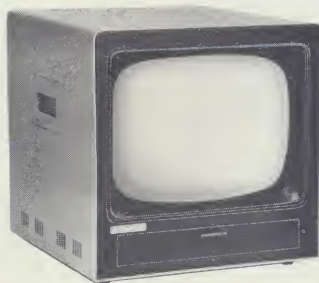
**GENERAL
PURPOSE
DISPLAYS
TUBE TYPE**



**8-INCH DISPLAYS
CNB8 Series**



**14-INCH DISPLAYS
Models CKD14, CLD14**



**17- & 23-INCH DISPLAYS
CVB17, CVB23 Series**



**25-INCH DISPLAY
Model CEA25**

The CNB series 8-inch television displays are high performance, broadcast quality units designed for continuous duty operation in broadcast, industrial and computer generated signal applications. The CNB8's are available in a portable carrying case, dual rack-mount and chassis models. Rack mounts fit standard 19" racks, using only 10-1/2" of vertical space, with a variety of front panels permitting installation of other equipment.

Conrac's CKD and CLD 14-inch displays are designed for continuous operation, with minimum maintenance, in broadcast studio, industrial and computer generated signal applications. 10mHz video response and total power regulation assures an extremely stable display. CKD14 is in a portable cabinet, CLD14 is a rack mount unit, taking up only 10-1/2" of vertical rack space.

The CVB series are 17- and 23-inch industrial displays with 10mHz video response, total power regulation, differential input to minimize hum on long cables. 17-inch models are available in chassis, cabinet or rack mount (19" rack, 17" high, 18" deep) models; 23-inch in cabinet, ceiling or pedestal mounts, ideal for audience and classroom viewing, public information displays.

A large screen unit for audience viewing and public information displays, the CEA25 is a monochrome industrial display designed to give professional quality pictures in high ambient light areas. 10mHz video response, total power regulation, differential input to minimize hum on long cables, bonded and etched safety shield to minimize specular reflections, locking trapdoor to prevent tampering with operating controls. A compact unit for use where cabinet styling and picture stability are important.

Shown: Model CEA25/Y with speaker and pedestal mount.

**CONRAC II
SOLID STATE
DISPLAY**



**9-INCH MONOCHROME
Model KNB9**

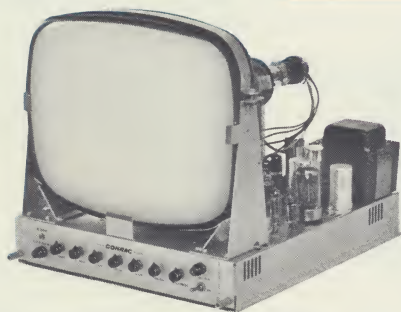
A 100% solid state, 9-inch display ideal for both industrial and educational applications, the KNB9 series includes chassis, cabinet, rack mount and dual rack mount models. Dual mount models fit side by side in a standard 19" rack, 8-3/4" high, 8-15/16" deep. Video response 3dB down at 8mHz; low voltage regulation; 600 line center, 400 line corner resolution; high quality design and construction throughout, including glass-epoxy circuit boards with quick disconnects.

A complete specification sheet is available for each product.

**HIGH
RESOLUTION
MONITORS
TUBE AND
SOLID STATE**



**14, 17, 21 INCH SOLID STATE MONITORS
RQA Series**

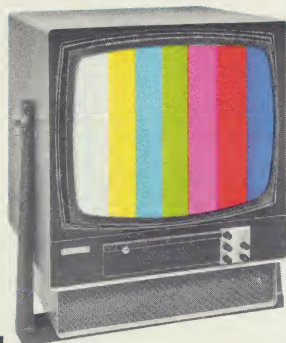


**14- 17- 21-INCH TUBE MONITORS
CQF Series**

The RQA video monitors are all solid state, high resolution design, using modular construction and featuring automatic field rate and line rate sensing. The units automatically will lock on any field rate and line rate, within specifications, without readjustment. Video bandwidth is flat to 30 mHz ± 1 dB. Linearity is better than 1% of picture height. Differential video input, dynamic focus, video inversion, switchable picture size, all add up to a truly professional instrument.

A high resolution monitor, model CQF features 30mHz video response for operation at 875, 945 or 1029 lines, 60 field operation. Other horizontal scanning frequencies are available. Nearly perfect interlace is assured through special circuitry when scaled up EIA sync is used; adjustable retrace blanking allows higher brightness levels. 14, 17 and 21-inch screen sizes are standard, available as chassis, cabinet or rack mount models.

**COLOR DISPLAY
SOLID STATE
ENCODED**



**19 & 25 INCH
Models KHA19, KHA25**

As low cost, utility color displays, all transistorized, the KHA19 and 25-inch models are ideal for audience viewing and process control applications. Both models are designed to aid in the economical changeover to color—KHA25 is mechanically interchangeable with the Conrac CEA25 and CVA23 or CVB23; KHA19 fits a standard 19" rack, 19-1/4" high, 20" deep. Controls are simplified and easy to operate, with all operating, setup and convergence controls conveniently accessible at the front of the display. Rack and cabinet models are available.

Shown: Model KHA25/Y with speaker and pedestal mount.

ACCESSORIES

Speaker Enclosures: 3" x 14" extended range speakers for field mounting to 23" and 25" displays.

Pedestal Mounts: Permit installation of monitors to a permanent mounted base or portable base, for mounting 17", 19", 21", 23", 25" displays.

Ceiling Mounts: For suspending monitors with standard 1 1/2" pipe, for mounting 17", 19", 21", 23" displays.

Rack Slides: Generally available for any unit that will physically fit within a standard 19" rack.

Dolly: Three-wheel dolly, used in conjunction with pedestal mounts.

A complete specification sheet is available for each product.

600 No. Rimsdale Ave., Covina, California 91722 (213) 966-3511

CONRAC DIVISION
CONRAC
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CONRAC PRICE LIST

EFFECTIVE:
FEBRUARY 1, 1970

INDUSTRIAL TELEVISION EQUIPMENT

MODEL	DESCRIPTION	NET PRICE
OFF-AIR RECEIVERS		
AV12E	Basic Audio-Video Receiver (less plug-in unit)	\$ 355.00
	Plug-in Units for AV12E:	
	SU-213 12-Channel Station Selector	65.00
	MCU Single Channel Unit (VHF only)	140.00
AV82E	Basic Receiver for VHF/UHF Operation (Requires SU213 Plug-in Unit) ..	440.00
ERL82A	VHF/UHF Operation	355.00
ERL82A/R	For Rack Mount	355.00

CONRAC II TRANSISTORIZED MONOCHROME DISPLAYS

KNB9/C	9" Unit in Metal Cabinet	230.00
KNB9/2R	Twin 9" Units in Mounting for 19" Rack	435.00
KNB9/N	9" Unit, Chassis only	200.00
KNB9/RBL	9" Unit in 19" Rack Mounting with Left of Front Panel Blank	235.00
KNB9/RBR	9" Unit in 19" Rack Mounting with Right of Front Panel Blank	235.00
KNB9/RKL	9" Unit in 19" Rack Mounting to Accommodate Tektronix 528 Scope Left	235.00
KNB9/RKR	9" Unit in 19" Rack Mounting to Accommodate Tektronix 528 Scope Right	235.00

TRANSISTORIZED COLOR DISPLAYS (Encoded)

KHA19/C	19" Color Monitor in Metal Cabinet ..	1,400.00
KHA19/Y	19" Color Monitor in Metal Cabinet with Mounting Studs	1,400.00
KHA19/RS	19" Color Monitor for Mounting in 19" Rack with Slides	1,400.00
KHA25/C	25" Color Monitor in Metal Cabinet ..	1,475.00
KHA25/Y	25" Color Monitor in Metal Cabinet with Mounting Studs	1,475.00

MONOCHROME DISPLAYS (Tube Type)

CNB8/C	8" Unit in Metal Cabinet	335.00
CNB8/2R	Twin 8" Units in Mounting for 19" Rack	605.00
CNB8/N	8" Unit, Chassis only	280.00
CNB8/RBL	8" Unit in 19" Rack Mounting with Left of Front Panel Blank	325.00
CNB8/RBR	8" Unit in 19" Rack Mounting with Right of Front Panel Blank	325.00
CNB8/RXL	8" Unit in 19" Rack Mounting to Accommodate Tektronix 529 Scope Left	325.00
CNB8/RXR	8" Unit in 19" Rack Mounting to Accommodate Tektronix 529 Scope Right	325.00

MODEL	DESCRIPTION	NET PRICE
MONOCHROME DISPLAYS (Tube Type)		
CNB8/RKL	8" Unit in 19" Rack Mounting to Accommodate Tektronix 528 Scope Left	325.00
CNB8/RKR	8" Unit in 19" Rack Mounting to Accommodate Tektronix 528 Scope Right	325.00
CNB8/RC	Single 8" Unit Centered in Mounting for 19" Rack	345.00
CKD14	14" Unit in Metal Cabinet	385.00
CLD14	14" Unit in Mounting for 19" Rack ..	385.00
CVB17/C	17" Unit in Metal Cabinet	380.00
CVB17/R	17" Unit in Mounting for 19" Rack ..	370.00
CVB17/N	17" Unit, Chassis only	300.00
CVB17/Y	17" Unit in Metal Cabinet with Mounting Studs	380.00
CVB23/C	23" Fully Regulated Unit in Metal Cabinet	435.00
CVB23/Y	23" Fully Regulated Unit in Metal Cabinet with Mounting Studs	435.00
CEA25/C	25" Fully Regulated Unit in Metal Cabinet	515.00
CEA25/Y	25" Fully Regulated Unit in Metal Cabinet with Mounting Studs	515.00

TRANSISTORIZED MONOCHROME DISPLAYS

RND9/C	9" Unit in Metal Cabinet	465.00
RND9/2R	Twin 9" Units in Mounting for 19" Rack	885.00
RND9/N	9" Unit, Chassis only	425.00
RND9/RBL	9" Unit in 19" Rack Mounting with Left of Front Panel Blank	460.00
RND9/RBR	9" Unit in 19" Rack Mounting with Right of Front Panel Blank	460.00
RND9/CXU	9" Unit in Portable Metal Cabinet to Accommodate Tektronix 529 Scope Below	505.00
RND9/RXL	9" Unit in 19" Rack Mounting to Accommodate Tektronix 529 Scope Left	460.00
RND9/RXR	9" Unit in 19" Rack Mounting to Accommodate Tektronix 529 Scope Right	460.00
RND9/RKL	9" Unit in 19" Rack Mounting to Accommodate Tektronix 528 Scope Left	460.00
RND9/RKR	9" Unit in 19" Rack Mounting to Accommodate Tektronix 528 Scope Right	460.00
RKC14	14" Unit in Metal Cabinet	500.00
RLC14	14" Unit in Mounting for 19" Rack ..	500.00
RVC17/C	17" Unit in Metal Cabinet	515.00
RVC17/R	17" Unit in Mounting for 19" Rack ..	505.00
RVC17/N	17" Unit, Chassis only	435.00
RVC17/Y	17" Unit in Metal Cabinet with Mounting Studs	515.00

Continued

All prices include picture tube and are subject
to change without notice. Terms are 30 days net.
Shipments are F.O.B. Covina, California.

CONRAC

COVINA, CALIFORNIA 91722

Continued

MODEL	DESCRIPTION	NET PRICE
TRANSISTORIZED MONOCHROME DISPLAYS		
RVC23/C	23" Fully Regulated Unit in Metal Cabinet	545.00
RVC23/Y	23" Fully Regulated Unit in Metal Cabinet with Mounting Studs	545.00

HIGH RESOLUTION MONITORS

Units are available on frequencies between 525 and 1225 lines.

CQF14/C	14" Unit in Metal Cabinet	\$ 680.00
CQF14/R	14" Unit for Mounting in 19" Rack ..	670.00
CQF14/N	14" Unit, Chassis only	600.00
CQF14/Y	14" Unit in Metal Cabinet with Mounting Studs	680.00
CQF17/C	17" Unit in Metal Cabinet	700.00
CQF17/R	17" Unit for Mounting in 19" Rack ..	690.00
CQF17/N	17" Unit, Chassis only	620.00
CQF17/Y	17" Unit in Metal Cabinet with Mounting Studs	700.00
CQF21/C	21" Unit in Metal Cabinet	800.00
CQF21/R	21" Unit for Mounting in 24" Rack ..	780.00
CQF21/N	21" Unit, Chassis only	700.00
CQF21/Y	21" Unit in Metal Cabinet with Mounting Studs	800.00

**TRANSISTORIZED
HIGH RESOLUTION MONITORS**

Features automatic vertical field rate (from 15 to 60 Hz) and horizontal line rate sensing (from 500 to 1225 lines).

RQA14/C	14" Unit in Metal Cabinet	\$1,390.00
RQA14/R	14" Unit for Mounting in 19" Rack ..	1,380.00
RQA14/N	14" Unit, Chassis only	1,310.00
RQA17/C	17" Unit in Metal Cabinet	1,410.00
RQA17/R	17" Unit for Mounting in 19" Rack ..	1,400.00
RQA17/N	17" Unit, Chassis only	1,330.00
RQA17/Y	17" Unit in Metal Cabinet with Mounting Studs	1,410.00
RQA21/C	21" Unit in Metal Cabinet	1,510.00
RQA21/R	21" Unit for Mounting in 24" Rack ..	1,490.00
RQA21/N	21" Unit, Chassis only	1,410.00
RQA21/Y	21" Unit in Metal Cabinet with Mounting Studs	1,510.00

ACCESSORIES

ES23	Enclosure and Speaker for CVB23, RVC23, KHA25	40.00
ES25	Enclosure and Speaker for a CEA25.	40.00

*Continued**Continued*

MODEL	DESCRIPTION	NET PRICE
M3	Three-Wheel Dolly (less pipe) used with M4, M6 and M8 Mount to make Mobile Pedestal	60.00
M4	Pedestal Mount for KHA19/Y	40.00
M5	Ceiling Mount for KHA19/Y	30.00
M6	Pedestal Mount for 17" CVB17/Y, CQF14/Y, CQF17/Y, RVC17/Y, RQA17/Y	40.00
M7	Ceiling Mount for 17" CVB17/Y, CQF14/Y, CQF17/Y, RVC17/Y, RQA17/Y	30.00
M8	Pedestal Mount for CVB23/Y, CEA25/Y, CQF21/Y, RVC23/Y, KHA25/Y, RQA21/Y	40.00
M9	Ceiling Mount for CVB23/Y, CEA25/Y, CQF21/Y, RVC23/Y, KHA25/Y, RQA21/Y	30.00
6013	Table Mounting Kit — Contains panels and all parts necessary to make ERL82 into table model	15.00

Conrac's CDF series is designed to be used as a graphic display, or when driven by a symbol generator at a 60 Hz refresh rate, to display alphanumeric characters. Inputs to the X and Y deflection amplifiers are low analog voltages; Z axis (blanking) input is digital.

CDF units are self-contained display modules, including the deflection amplifiers, blanking amplifier, yoke and CRT. The high voltage supply is fully regulated to prevent format size changes with varying character count. Input power is 115 volts AC, 60 Hz.

To prevent phosphor burns, the Z axis amplifier is interlocked such that unblanking will not occur unless there is a minimum of X and Y deflection signal at the yoke.

The deflection amplifiers on the standard configurations are AC coupled. Character writing information may be superimposed on the coarse X and Y deflection signals.

The video circuit provides an intensity delay variable from the front panel between approximately $\frac{1}{2}$ to $2\frac{1}{2}$ microseconds to permit synchronizing the video signal to the deflection signal. This is followed by intensity unblanking, duration variable, from the front panel. During this normally 25 to 35 microseconds, the cathode is driven directly for intensity control.

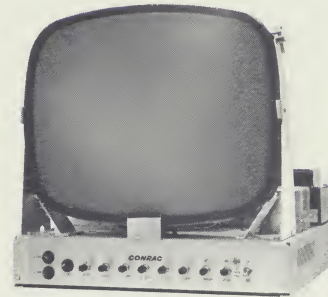
The CRT may be an 8", 9", 14", 17", 21" or 23" with most EIA registered phosphors. Plain or etched bonded safety panels are available. The tubes are electrostatically focused and electromagnetically deflected, with a 70° or 90° deflection angle, depending upon tube size. High resolution CRTs are also available.

Standard packaging includes bare chassis or cabinets for 17 and 23 inch, and rack mounts for the 14 and 17 inch displays.

Conrac welcomes the opportunity to quote on any CRT display requirements. Please contact the sales manager, data display equipment.

X-Y CRT DISPLAYS

CDF Series



CHASSIS ONLY



14-INCH RACK MOUNT



17-INCH CABINET



23-INCH CABINET WITH CEILING MOUNT

CONRAC DIVISION
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Specifications

TECHNICAL DATA

Input Power: 120 volts AC, 60 Hz, 150 watts max.

X-Y Deflection Amplifier: Input — 2 to 6 volts p-p for full scale deflection. Impedance — 2000 ohms. Small signal linear ramp response — typically 1 μ s for 0.025" screen distance on a 23", 90° deflection angle CRT. Small signal sine wave response — 3 dB down at 200 kHz. Corner to corner retrace — 70 μ s including setting time on a 90° angle CRT at 14 KV ultor voltage (55 μ s on a 70° CRT).

Z Blanking Amplifier: Input — digital, —2 volts to unblank, impedance 1000 ohms. Response—less than 100 nanoseconds.

Lineality: 2% of full scale, nominal (Depends upon geometric distortion of CRT selected).

Repeatability: Within a spot size.

CONTROLS, CONNECTORS, ADJUSTMENTS

Front panel:

Brightness	Focus	Horizontal center
Horizontal size	Vertical center	Vertical size
Z duration	Z delay	Z test
Power on and off		

Rear apron:

Connectors	X, Y and Z inputs	Ground and power
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Chassis deck: High voltage adjustment

CONSTRUCTION

Metal cabinet, anodized aluminum chassis, plug-in circuit boards for ease of maintenance. Copper banded transformer, computer grade and first quality components throughout. Three wire AC cord, 6 feet long.

OPTIONS

DC coupled deflection amplifiers, limited to 50% duty cycle at full scale deflection.

Shielding for asynchronous refresh rate.

Direct coupled video amplifier with 100 nanosecond rise and fall time (a no cost option).

MECHANICAL

Bare Chassis: 45 lbs.

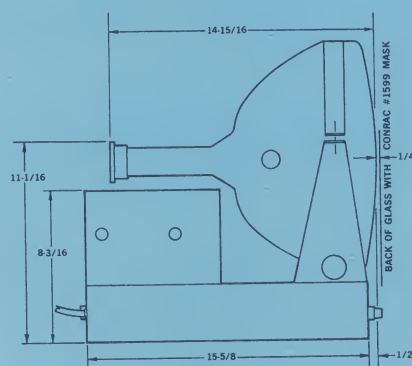
20.5 kilos

17" cabinet: 89 lbs.

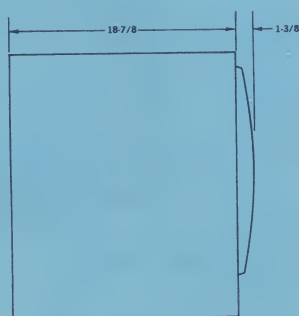
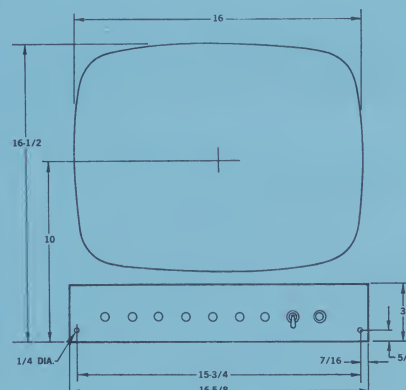
40.5 kilos

23" cabinet: 110 lbs.

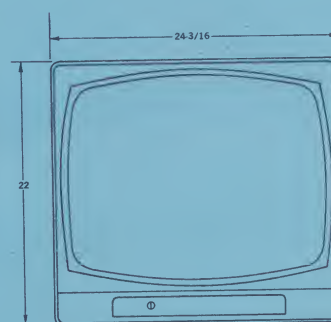
50 kilos



CDF 17/N



CDF 23/C



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